

## **ABSTRAK**

### **KAJIAN SIFAT FISIKO KIMIA DAN INDEKS GLIKEMIK OYEK DAN TIWUL DARI UMBI GARUT (*Marantha arundinaceae L.*), SUWEG (*Amorphallus campanullatus* BI) DAN SINGKONG (*Manihot utilissima*)**

**Oleh**

**Verawati Hasan <sup>(1)</sup>, Sussi Astuti <sup>(2)</sup>, Susilawati <sup>(2)</sup>**

Beberapa penelitian telah dilakukan terhadap beberapa pangan yang diduga memiliki indeks glikemik rendah dan serat pangan tinggi, terkait fungsinya sebagai makanan fungsional, termasuk dari jenis umbi-umbian. Umbi-umbian diyakini memiliki sifat fungsional karena memiliki serat pangan (*dietary fiber*). Pemanfaatan umbi-umbian minor seperti suweg dan garut sebagai bahan baku oyek dan tiwul belum banyak dilakukan.

Penelitian ini bertujuan untuk mengetahui sifat fisiko kimia dan indeks glikemik oyek dan tiwul yang terbuat dari umbi garut, suweg dan singkong. Penelitian dilaksanakan di Laboratorium Kimia dan Biokimia Politeknik Negeri Universitas Lampung Laboratorium Biokimia IPB dan Laboratorium Pengolahan Hasil Pertanian SMKN 2 Metro, dari bulan April sampai Agustus 2011. Penelitian disusun faktorial dengan dua ulangan. Faktor pertama adalah jenis umbi (garut, suweg dan singkong) dan faktor kedua adalah jenis olahan (oyek dan tiwul). Data hasil penelitian diolah secara deskriptif dengan menggunakan nilai rata-rata dan disajikan dalam bentuk diagram batang.

Hasil penelitian menunjukkan bahwa kadar total pati oyek dan tiwul singkong tertinggi (68.28% dan 77.28%) diikuti oyek dan tiwul garut (69.87% dan 71.46%), dan terendah oyek dan tiwul suweg (65.37% dan 70.80%) ; kadar amilosa oyek dan tiwul suweg tertinggi (26.29% dan 26.89%) diikuti oyek dan tiwul garut (22.13% dan 22.11%), dan terendah oyek dan tiwul singkong (15.81% dan 13.72% ; kadar amilopektin oyek dan tiwul singkong tertinggi (84.19% dan 85.28%) diikuti oyek dan tiwul garut (77.87% dan 77.89%) dan terendah oyek dan tiwul suweg ( 73.71% dan 73.91%) ; kadar serat pangan oyek dan tiwul suweg tertinggi (14.41% dan 15.17%) diikuti oyek dan tiwul garut (9.76% dan 15.17%) dan terendah oyek dan tiwul singkong (9.25% dan 9.98%) ; kadar pati resisten oyek garut 14.89%, tiwul garut 19.43%, oyek suweg 19.66%, tiwul suweg 20.04%, oyek singkong 7.20% dan tiwul singkong 7.64% ; daya cerna pati oyek dan tiwul suweg tertinggi (28.75% dan 26.67%), diikuti oyek dan tiwul garut (24.47% dan 19.43%) dan terendah oyek dan tiwul singkong (20.60% dan 18.87%).

Hasil pengukuran terhadap nilai Indeks Glikemik (IG) menunjukkan bahwa nilai IG oyek garut sebesar 41, oyek suweg sebesar 42, oyek singkong sebesar 30, sedangkan tiwul garut memiliki nilai IG sebesar 40, tiwul suweg sebesar 40 dan tiwul singkong sebesar 29. Oyek dan tiwul garut, suweg dan singkong tergolong bahan pangan yang memiliki nilai IG rendah (<55).

Kata kunci : oyek, tiwul, umbi-umbian, sifat fisiko kimia, indeks glikemik

1. Alumni Fakultas Pertanian Program Studi Magister Teknologi Agroindustri
2. Dosen Fakultas Pertanian Program Studi Magister Teknologi Agroindustri

## ABSTRACT

### STUDY OF PHYSICO CHEMICAL PROPERTIES AND GLYCEMIC INDEX

### OYEK AND TIWUL FROM ARROWROOT TUBERS

(*Maranthaceae L.*), SUWEG (*Amorphallus campanulatus* BI) AND  
CASSAVA (*Manihot utilissima*)

By

Verawati Hasan <sup>(1)</sup>, Sussi Astuti <sup>(2)</sup>, Susilawati <sup>(2)</sup>

Many diagnostic studies have been conducted on some of the suspected food to have a low glycemic index and high fiber foods, related its functions as a functional food, including the type tubers. Tubers are believed to have functional properties because it has fiber (dietary fiber). Utilization of minor tubers like suweg and arrowroot is as a raw material of oyek and tiwul not yet widely applied.

This study is aimed aims to describe the physico-chemical properties and indices glycemic oyek and tiwul made from tubers of arrowroot, suweg and cassava. Research conducted at the Laboratory of Chemistry and Biochemistry Polytechnic University of Lampung, Laboratory of Biochemistry IPB and Processing Laboratory Agricultural SMKN 2 Metro, from April to August 2011. Research compiled factorial with two replications. The first factor is the type of roots (arrowroot, suweg and cassava) and the second factor is the type of processed (oyek and tiwul). Data processed is in a descriptive study by using the average value average and is presented in the form of bar charts.

The results showed that levels of total starch in cassava oyek and tiwul and higher (68.28% and 77.28%) than the levels of total starch in oyek and tiwul from arrowroot (69.87% and 71.46%) and oyek and tiwul from suweg (65.37% and 70.8%); levels of amylose oyek and tiwul from suweg are the highest (26.29% and 26.89%) followed by oyek and tiwul from arrowroot (22.13% and 22.11%) and the lowest oyek and tiwul from cassava (15.81% and 13.92%); levels of amylopectin in oyek and tiwul from cassava are the highest (84.19% and 85.28%) followed by oyek and tiwul arrowroot (77.87% and 77.89%) and lowest oyek and tiwul from suweg (73.71% and 73.91%); levels of fiber content oyek and tiwul from suweg are the highest (14.41% and 15.17%) followed by oyek and tiwul from arrowroot (9.76% and 15.17%) and lowest oyek and tiwul from cassava (9.25% and 9.98%); levels of resistant starch oyek from arowroot is 14.89%, oyek from suweg 19.66%, oyek from cassava 7.20%, tiwul from arrowroot 9.43%, tiwul from suweg 20.04% and tiwul from cassava 7.64%. The highest starch digestibility obtained in oyek and tiwul from suweg (28.75% and 26.67%), followed by oyek and tiwul from arrowroot (24.47% and 22.76%) and the lowest oyek and tiwul from cassava (20.60% and 18.87%).

The measurement results of the IG indicate that IG value of arrowroot oyek is 41, oyek from suweg 42, oyek from cassava 30, while tiwul arrowroot have glycemic index 40, tiwul suweg 40, and cassava 29. Oyek and tiwul from arrowroot, suweg and cassava classified as food that has an index glycemic (GI) low (<55).

Key words: oyek, tiwul, tubers, physico-chemical properties, the glycemic index

1. Alumnus of Agriculture Faculty Magister Technology Agroindustry University of Lampung
2. Lecture of Agriculture Faculty Magister Technology Agroindustry University of Lampung